

Biogeosciences Discuss., referee comment RC2
<https://doi.org/10.5194/bg-2021-234-RC2>, 2021
© Author(s) 2021. This work is distributed under
the Creative Commons Attribution 4.0 License.



Comment on bg-2021-234

Anonymous Referee #2

Referee comment on "Methane accumulation affected by particulate organic carbon in upper Yangtze deep valley cascade reservoirs, China" by Yuanyuan Zhang et al., Biogeosciences Discuss., <https://doi.org/10.5194/bg-2021-234-RC2>, 2021

Review

Methane accumulation affected by particulate organic carbon in upper Yangtze deep valley dammed cascade reservoirs, China

By Zhang et al. Biogeosciences

Major comments

This is an interesting paper where the authors study the functioning of the hydropower reservoir on the accumulation and emission of methane. It's a timely contribution but some edition is needed before it should be accepted for publication. I am not English native and had a hard time understanding the writing particularly in the introduction. I think the writing in this ms should be carefully revised. I made some specific comments below but might be more. Most of the result section is discussion of the results. Finally, I do not clearly see from the results how the dam operation affects POC accumulation.

Specific comments

Title: I think dammed is unnecessary to say since reservoirs are dammed...

Lines 56-58. Unclear why the cumulative effect of POC caused by cascade reservoirs should be at a bimonthly scale

Line 70. Revise the phrase "explicitly and well explained"

Lines 796-77. Unclear what you mean with "geomorphological alternation " and "and nutrients from surrounding communities"

Line 79. Dam, reservoir, impoundment are synonymous to me...aren't they? Unclear what you mean with "Dam construction and reservoir impoundments"

Line 90. You use supported very close twice. Unclear if you are commenting results from others studies or where does this evidence comes from since a reference is missing here.

Lines 93-94. Please revise "has been received challenges"

Line 96. Predictors for what?

Line 115. Unclear what you mean with "sophisticated"

Line 119 Correct "physiochemical"

Line 121. Unclear what you mean with "dammed reservoirs"

Line 131. Which parameters?

Line 133. Unclear what you mean with every other month...monthly, bimonthly?

Lines 138-139. Unclear what you mean here "The sampling time of a day was controlled between 8:00 AM and 6:00 PM"

Line 142. Revise "disturbance to collected samples"

Line 145-146. Two 10 L water samples? One 0.5 m below the water surface and other above the sediment? Which was the depth of the sampling points?

Line 148. How do you know the water column was well mixed? Did you measure water temperature?

Line 152. Please define here HRT

Line 191. Particulate matter or chlorophyll a (Chl-a) concentration? I am not familiar with this methodology. Could you add any reference?

Line 195. Unclear what you mean with infiltration.

Line 220. Is it ok to use plankton as autochthonous end member? I think periphyton is the widely used community. At least write a couple of sentences regarding your decision.

Line 302-303. This is discussion. Besides, why excrement? Do you mean raw sewage?

Lines 312-325. Discussion.

Lines 335-337. Discussion.

Lines 374-388. Discussion.

Lines 389-411. Most of this section is discussion. Thus, move to discussion.